

CHEREpanov, A.I.; NOVIKOV, S.I.; GOMOYUNOVA, N.P.

Effect of insecticidal aerosols produced by the TDA generator
on Arthropoda in pine stands. Trudy Biol. inst.Sib.otd.AN SSSR
no. 10:141-151 '63.
(MIRA 17:5)

CHEREpanov, A. I.

Cherepanov, A. I. - "The mass multiplication of the Siberian silkworm in Transbayknalia and the future of the use of the biological method of fighting it", *Investiya Zap.-Sib. filiala Akad. nauk SSSR, Seriya biol.*, 1948, Issue 2, p. 53-62, - Bibliog: 5 items.

SO: U-4110, 17 July 53, (Letopis izhurnal 'nykh Statey, No. 19, 1949).

CHEREpanov, A. I.

Cherepanov, A. I. - "Shad trematodes", Izvestiya Zap.-Sib. filiala, Akad. nauk
SSR, Seriya biol., 1948, Issue 2, p. 63-68.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

- [illegible]

1. CHEREPANOV, A.I.
2. USSR (600)
4. Agriculture
7. Insect pests of the shelterbelts. Novosibirsk, Oblastnoe izd-vo, 1952

9. Monthly List of Russian Accessions, Library of Congress, March, 1953. Unclassified.

CHEREPANOV, A. I.

"Contributions to the Study of the Wood Beetle (Coleoptera cerambycidae) of the Tuvian Autonomous Region," Zool. Zhur., 31, No.2, pp 276-83, 1952

CHEREPANOV, A.I.

Geographical distribution of grasshoppers *Zichya deracanthoides*
B.-Blenko and *Zichya baranovi* B.-Blenko in the Tuvian Province.
Ent.oboz. 32:206-207 '52. (MLRA 7:1)

1. Zapadno-Sibirskiy filial Akademii nauk SSSR, Novosibirsk.
(Tuva Autonomous Province--Locusts)
(Locusts--Tuva Autonomous Province)

CHEREpanov, A.I.

Occurrence of wireworms (Elateridae, Coleoptera) in fields of
Western Siberia. Zool.shur. 33 no.5:1058-1064 8-0 '54. (MLBA 7:11)

1. Biologicheskii institut Zapadno-Sibirskogo filiala Akademii
nauk SSSR.

(Siberia, Western--Wireworm) (Wireworm--Siberia, Western)

CHERE PANOV, A. I.

USSR/Biology - Zoology

Card 1/1 : Pub. 22 - 36/41

Authors : Cherepanov, A. I., and Volgina, K. P.

Title : Displacement of root plants in the soil studied by the marked atom method

Periodical : Dok. AN SSSR 98/2, 301-302, Sep 11, 1954

Abstract : A marked atom method for studying root plant displacements in the soil is described. Four references: 3-USSR and 1-USA (1929-1950).

Institution : Academy of Sciences USSR, West Siberian Branch

Presented by : Academician K. I. Skryabin, May 20, 1954

CHEREPAKOV, A. I.

USSR 7 General and Special Zoology. Insects

P

Abs Jour: Ref Zhur-Biol., No 1, 1958, 2132

Author : A. I. Cherepanov

Inst : Biological Institute of the West Siberian Affiliate
of the Academy of Sciences USSR

Title : The insects of the Tuvin autonomous oblast

Orig Pub: Tr. Biol., In-ta Zap. Sib. fil. AN SSSR, 1956,
vyp. 1, 35-77

Abstract: A brief account of the investigation of the entomological fauna of the Tuvin autonomous oblast. The distribution of insects along landscape zones. Systematic lists of the following families: Elateridae, Buprestidae, Coccinellidae, Chrysomelidae, Cerambycidae, Scarabaeidae (Coleoptera), Tenthredinidae and Siricidae (Hymenoptera). Zoogeographical evaluation of separate elements of the

Card 1/2

Cherepanov, A.I.

USSR/General Division. Congresses. Sessions. Conferences. A-4

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 4688

Author : A. I. Cherepanov

Inst :

Title : Conference of Entomologists of Western Siberia

Orig Pub : Entomol. obozreniye, 1956, 35, No 4, 956-957

Abstract : A conference was held in Novosibirsk May 10-13, 1956. The lag in investigations of the insect fauna of Western Siberia and the ecology of pests attacking grain and industrial crops, and failure to meet the needs of agriculture of Siberia was noted.

Card 1/1

USSR/General and Special Zoology - Insects.

P.

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30547

Author : Cherepanov, A.I.

Inst :

Title : The Humidity Effect on the Activity of Wire Beetles.

Orig Pub : Tr. Tomskogo un-ta, 1956, 142, 201-208

Abstract : Experiments were carried on with food in the form of germinating wheat grains in crystallizing basins with podzol soil (3 cm) and in glasses with black soil (5 cm) at room temperatures. The wire beetles were very sensitive to the humidity of the environment. Some species were more resistant to dryness, others were less resistant. Young larvae of the wire beetles lost more weight in dry soil and perished sooner than adult larvae. Fully grown larvae did not lose weight in soil of 22.3%-23.4% (apparently optimal). The wire insects perished in podzol soil with less than a 4% decrease in moisture;

Card 1/2

USSR/General and Special Zoology - Insects.

P.

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30547

in black soil they perished at a decrease of 6-7% in moisture. At a change in the soil moisture the wire insects began to migrate in vertical and horizontal directions, moving from sections with insufficient or surplus moisture into sections with more or less optimal moisture.

Card 2/2

- 14 -

CHEREPANOV, A.I.; STROGANOV, S.U., prof., doktor biologicheskikh nauk, otv. red.;
OMYSH-KUZNETSOV, S., red.; CHIKOV, A.M., tekhn. red.

[Click beetles of Western Siberia] Zhuki-shchelkany Zapadnoi
Sibiri (Coleoptera, Elateridae). [Novosibirsk] Novosibirskoe
knizhnoe izd-vo, 1957. 380 p. (MIRA 11:12)
(Click beetles)

CHEREPANOV, A.I.

Status and tasks of research in the Biological Institute of the
West Siberian Branch of the Academy of Sciences of the U.S.S.R.
[with summary in English]. Izv.AN SSSR Ser.biol. 23 no.2:227-235
Mr-Apr '58. (MIRA 11:4)

1. Zapadno-Sibirskiy filial AN SSSR.
(SIBERIA, WESTERN--BIOLOGICAL RESEARCH)

CHEREPA NOV, A. /.

Conference of Siberian zoologists. Zool. zhur. 37 no.7:1117-1120
Jl '58.

(MIRA 11:8)

(Siberia--Zoological research)

CHEREpanov, A.I.

Conference on insect microbiology and pathology and microbiological
control of agricultural and forest pests. Ent.oboz.39 no.4:964-965 '60.
(MIRA 14:3).

(Insects, Injurious and beneficial—Biological control)

CHEREpanov, A.I.

Study of the soil insects of Western Siberia. Izv.Sib.otd.AN SSSR.
no.1:105-112 '61. (MIRA 14:2)

1. Biologicheskiy institut Sibirskogo otdeleniya AN SSSR.
(Soil fauna)

CHEREpanov, A.I.

Injurious insects and problems of conservation of the steppe
woods in Western Siberia. Okhr. prir. Sib. i Dal'. Vost.
no.1:154-161 '62. (MIRA 17:5)

CHEREpanov, A.I.

Pests inhabiting tree trunks in forests of the shore region of
Novosibirsk Reservoir. Trudy Biol. inst. Sib. otd. AN SSSR
no.7:175-187 '61.

(MIRA 15:3)

(NOVOSIBIRSK RESERVOIR REGION--FOREST INSECTS)

CHEREPAHOV, A.I.

Role of insects in the destruction of tree stumps in cut-over
areas of the Novosibirsk Reservoir region. Trudy Biol. inst.
Sib. otd. AN SSSR no.7:189-192 '61. (MIRA 15:3)
(NOVOSIBIRSK RESERVOIR REGION - FOREST INSECTS)

CHEREPA NOV, A. I.

Symposium on the Siberian silkworm (*Dendrolimus sibiricus*
Tschtr.). Zool. zhur. 40 no.8:1272-1274 Ag '61. (MIRA 14:8)
(Siberia--Forest insects--Congresses) (Moths)

CHEREPA NOV, A.I.; KIRICHENKO, A.N.

Hemiptera (Hemiptera-Heteroptera) of the Tuva A.S.S.R.. Trudy Biol.
inst. Sib. otd. AN SSSR no.8:5-32 '62. (MIRA 15:12)
(Tuva A.S.S.R.—Hemiptera)

KOLOMIYETS, Nikolay Grigor'yevich; ~~CHERE~~EPANOV, A.I., doktor biol.
nauk, otv. red.; PADERIN, G.N., red.; VYALYKH, A.M.,
tekhn. red.

[Parasites and predators of the tent caterpillar
Dendrolimus sibiricus] Parazity i khishchniki sibirskogo
shelkopriada. Novosibirsk, Izd-vo Sibirskogo otd-ia
AN SSSR. 1962. 172 p. (MIRA 16:7)
(Siberia--Tent caterpillars--Biological control)

CHEREPANOV, A.I.

Successive processes within entomofauna of the coastal area of
Novosibirsk Reservoir. Vop. skol. 7:198-199 '62. (MIRA 16:5)

1. Biologicheskiy institut Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

(Novosibirsk Reservoir region--Insects)

CHEREpanov, A.I.

Tent caterpillar (*Dendrolimus sibiricus* Tschetw.) and the problem of its control. Zool. zhur. 41 no.6:801-815 Je '62.

(MIRA 15:7)

1. Biological Institute of the Siberian Branch of the Academy of Sciences of the U.S.S.R., Novosibirsk.

(Siberia--Tent caterpillars--Biological control)

CHEREPA NOV, A.I.

Biology of the nun moth (*Oenaria monacha* L.) in pine forests of the Ob' Valley. Izv. SO AN SSSR no.12. Ser. biol.-med. nauk no.3: 76-81 '63. (MIRA 17:4)

1. Biologicheskiy institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.

CHEREpanov, A.I.

Basic problems of zoological research in Siberia. Zool. zhur.
42 no.7:977-989 '63. (MIRA 17:2)

1. Biological Institute, Siberian Branch of the Academy of
Sciences of the U.S.S.R., Novosibirsk.

KRIVOLUTSKIY, D.A.; ~~CHEREPANOV, A.I.~~; MAMAYEV, B.M.; DLUSSKIY, G.M.

Brief news and information. Zool. zhur. 42 no.7:1119-1126 '63.
(MIRA 17:2)

CHIEREPANOV, A. I.

"Vertical-zonal distribution of Ipidae (Coleoptera) in cedar forests of the Altai."
report submitted for 12th Intl Cong of Entomology, London, 8-16 Jul 64.

CHEREpanov, A.I.

Description of the larva of *Athous rufiventris* Eschz. (Coleoptera, Elateridae). Ent. oboz. 44 no.1:166-168 '65.

(MIRA 18:7)

1. Biologicheskii institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.

CHEREPAKOV, A.I.; GOMOTUNOVA, N.P.

Use of nettings impregnated with diethylamide of meta-toluic acid
for individual protection of humans against horseflies and
mosquitoes. Med. parazit. i parazit. bol. 32 no. 3:341-343 My-Je'63
(MIRA 17:3)

1. Iz Biologicheskogo instituta Sibirskogo otdeleniya AN SSSR
(dir. instituta - prof. A.I. Cherepanov).

CHEREPANOV, A.I., inzhener.

**Armature winding device. Energetik 4 no.7:23 J1 '56.
(Armatures) (MIRA 9:9)**

CHEREPANOV, A.I., inzhener; USACHEV, S.G., inzhener.

Installation of single-phase electric meters. Energetik 4 no.9:24-25
8 '56. (Electric meters) (MIRA 9:10)

CHEREPANOV, A.I.

Unit for recording phase frequency characteristics. Izv.tekh.
no.6:43-45 N-D '56. (MIRA 10:1)
(Electric meters)

AUTHOR: Cherepanov, A. I. (Molotov) 103-19-5-10/14

TITLE: On Improving the Quality of a Two-Point Control
(Ob uluchshenii kachestva dvukhpozitsionnogo regulirovaniya)

PERIODICAL: Avtomatika i Telemekhanika, 1958, Vol. 19, Nr 5,
pp. 471-474 (USSR)

ABSTRACT: The construction and the mode of operation of the controlling device suggested by the author for a two-point controller are described here. It is shown that an increase in the accuracy of a two-point controller can be obtained by the introduction of a peculiar intermittency into the controlling process from a special controlling device of the time-lag relay type. In a highly unsymmetrical process of two-point control such a control is most simply attained by means of an electromechanical device which serves for the limitation of one, e. g. only the positive, amplitude of the deviation of the control parameter. The effect of the controlling device is based upon the independent switching off of the current supply into the object according to the

Card 1/2

On Improving the Quality of a Two-Point Control

103-19-5-10/14

stipulated time after the moment of closing of the controller-contact. The formulae for the fundamental parameters of the controlling process are obtained by the employment of the simplified graphical-analytical method of computation of the two-point-control-processes (represented in reference 3). The formulae are here given in their final form. The described method was experimentally checked and a drying chamber served as object of the temperature control. There are 4 figures and 3 references, all of which are Soviet.

SUBMITTED: August 30, 1957

AVAILABLE: Library of Congress

1. Temperature control--Equipment--Test results

Card 2/2

8(2)

AUTHOR: Cherepanov, A. I., Engineer

SOV/119-59-12-10/18

TITLE: A Novel Two-position Thermoregulator With Thermoelectric²¹ Cor-
rection

PERIODICAL: Priborostroyeniye, 1959, Nr 12, pp 19-20 (USSR)

ABSTRACT: The instrument described here is based on a bimetallic regulator of the type TR-200.²⁴ An additional low-power heating coil installed in the container of the bimetallic regulator is used for thermoelectric correction. The heating coil is designed to compensate the thermal inertia of the bimetallic regulator. A slide resistance permits exact adjustment of its power. The additional heating coil is switched on and switched off together with the heating coil of the furnace to be controlled. There are 2 figures and 4 Soviet references. ✓

Card 1/1

CHEREPA NOV, Aleksey I. (Dr.)

Novosibirsk

"Okologische Gruppierungen der Schnellkafer (Elateridae) in
Westibirien."

at
report presented for the Intl. Congress of Entomology, Vienna, Austria,
17-25 August 1960.

16.9500

78159
SOV/103-21-3-5/21

AUTHOR: Cherepanov, A. I. (Perm')

TITLE: Analysis of a Two-Positioning Control System With Correction, in the Presence of Constant Prolonged Disturbances

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 3, pp 310-316 (USSR)

ABSTRACT: The study is a continuation of the previously published paper by the same author, "On Quality Improvement of Two-Positioning Control" (Ob uluchshenii kachestva dvukhpozitsionnogo regulirovaniya) Avtomatika i telemekhanika, Vol 19, Nr 5 (1958). The present study investigates dynamic states of a two-positioning control system having an electro-mechanical correcting element; the steady state was studied in the former paper. The principle of operation of the system was explained in that paper. The characteristic feature of this system is that the period of reiteration of heat inflow impulses into an object depends on the load, at

Card 1/3

Analysis of a Two-Positioning Control System
With Correction, in the Presence of Constant
Prolonged Disturbances

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SOV/103-21-3-5/21

constantly adjusted parameters of the arrangement. Plots of characteristic quantities of the system are given. Dependence of the degree of correction k on the inflow multiple n is established at a given constant time of switching on. The critical value of n_{cr} is determined. For $n < n_{cr}$ the normal action of the correction process is disturbed and new periodic oscillations of the temperature may appear. Plots of these periodic processes are shown. From them it results that the condition of normal operating correction ($n > n_{cr}$) is a necessary but not a sufficient condition. The optimum parameters of the correcting arrangement are determined for a given accuracy of regulation (degree of correction k) and for a minimum value of n_{cr} . In conclusion, the author says that (1) the simplified graphical analytical method of calculation of the two-positioning regulation processes may be used to analyze processes in systems with time correction, in the presence of disturbances; (2) at

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Analysis of a Two-Positioning Control System
With Correction, in the Presence of Constant
Prolonged Disturbances

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SOV/103-21-3-5/21

the optimum values of parameters of the correcting
arrangement, the correction acts normally, even
when in the presence of the strongest disturbances.
There are 4 figures; and 8 Soviet references.

SUBMITTED: October 28, 1958

Card 3/3

CHEREPANOV, A.I.

Letter to the editor. Avtom.i telem. 21 no.4:558 Ap '60.
(MIRA 13:6)

(Automatic control)

16.8000

S/141/62/005/005/008/016
E140/E135

AUTHOR: Cherepanov, A.I.

TITLE: The investigation of self oscillations in a simple relay system with correction

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v.5, no.5, 1962, 989-997

TEXT: An exact method is given using phase space, and point transformations, to investigate a relay system in which electronic time delays are switched in and out to compensate process and transport delays in the system. Formulae are obtained for calculating the basic parameters of self oscillation for various values of the correction circuits. Comparison is made with the results obtained on an analogue computer, and with an approximate method, for a certain second order temperature control system. There are 8 figures.

SUBMITTED: December 30, 1961

Card 1/1

CHEREpanov, A. I. (Perm')

Simplified analysis of multichannel two-positional control
processes and a method for their correction. Avtom. i telem. 23
no.9:1247-1253 S '62. (MIRA 15:10)

(Automatic control)

CHEREpanov, A. I.

Self-oscillations of a simple relay system with correction.
Izv. vys. ucheb. zav.; radiofiz. 5 no.5:989-977 '62.
(MIRA 15:10)

(Oscillations--Electromechanical analogies)

S/141/62/005/006/023/023
E140/E435

AUTHOR: Cherepanov, A.I.

TITLE: Two-position regulator with corrective signum-detector

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika.
v.5, no.6, 1962, 1245-1247

TEXT: The author studies a relay-type regulator in a system described by a second-order equation with lag. The use of a sign detector for correction leads to a stable system, whereas the introduction of lead does not. There are 2 figures. ✓

SUBMITTED: April 16, 1962

Card 1/1

CHEREPANOV, A.I.

A two-positional regulator with a compensating sigma transducer.
Inv.vys.ucheb.sov.; radiofiz. 5 no.6:1245-1247 '62.

(MIRA 16:2)

(Automatic control.)

S/141/62/005/006/023/023
E140/E435

AUTHOR: Cherepanov, A.I.

TITLE: Two-position regulator with corrective signum-detector

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika.
v.5, no.6, 1962, 1245-1247

TEXT: The author studies a relay-type regulator in a system described by a second-order equation with lag. The use of a sign detector for correction leads to a stable system, whereas the introduction of lead does not. There are 2 figures. ✓

SUBMITTED: April 16, 1962

Card 1/1

S/119/63/000/002/012/014
A004/A127

AUTHOR: Cherepanov, A.I.

TITLE: Improving the controlling properties of type MAPC (MARS) machines

PERIODICAL: Priborostroyeniye, no. 2, 1963, 28 - 29

TEXT: After presenting a general survey on the controlling properties of the type MARS machines for the digital recording of technological parameters, mentioning in particular the latest type MARS-200r, which makes possible an automatic control of parameters by the two-position principle, the author enumerates some deficiencies of these machines and then describes a special electronic correcting unit for the system of multichannel two-position control, which permits to substantially improve the accuracy, particularly under unsymmetrical operation conditions. This unit consists of individual cells. In utilizing, according to requirements, one, two, three or more such units it is possible to increase the accuracy of control in five, ten, fifteen, etc. of the most important spots. The correcting units are connected to the machine without any modifications being necessary. The

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Improving the controlling properties of...

S/119/63/000/002/012/014
A004/A127

author describes the operation of one cell of the correcting unit in detail, presents adequate block diagrams and points out that tests being carried out on the electronic MH-7 (MN-7) model revealed a substantial reduction in the amplitude of the parameters being controlled, particularly under unsymmetrical conditions. There are three figures.

Card 2/2

CHEREpanov, A.I.

Evaluating the error in the design of processes of simple two-
position control. Priboystroenie no.9:4-5 S '63. (MIRA 16:9)
(Automatic control)

CHEREPANOV, A.I. (Perm')

Effect of time and level quantization on the operation of
a two-positional control system. Avtom. i telem. 25 no.4:
578-581 Mr '64. (MIRA 17:6)

CHEREpanov, A.I.

Calculating processes in two-position program control systems.
Priborostroyeniye no.1:4-7 Ja. '65. (MIRA 18:3)

ROZHKOV, Anatoliy Sergeyevich; CHEREPANOV, A.I., otv. red.;
RODIONOV, L.Z., red.

[Mass reproduction of Dendrolimus and measures for its
control] Massevoe razmnozhenie sibirskogo shelkopriada
i mery bor'by s nim. Moskva, Nauka, 1965. 178 p.
(MIRA 18:12)

CHEREPANOV, Aleksey Ignat'yevich; GILYAROV, M.S., otv. red.;
RODIONOVA, L.Z., red.

[Wireworms of Western Siberia; a guide] Provolochniki
Zapadnoi Sibiri; opredelitel'. Moskva, Nauka, 1965. 189 p.
(MIRA 18:11)

CHEREpanov, A. I., prof.

Problem of the biological method for controlling agricultural
and forest pests (based on the materials of a symposium).
Agrobiologiya no.3:467-471 My-Je '65.

(MIRA 18:11)

1. Biologicheskii institut Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

CHEREPANOV A.I.

FA172T70

USSR/Mineralogy - Phenacite Artificial Synthesis 11 Oct 50

"Synthesis of Phenacite," P. P. Budnikov, Corr Mem, Acad Sci USSR, A. M. Cherepanov

"Dok Ak Nauk SSSR" Vol LXIV, No 5, pp 1011-1014

Used following for synthesis of phenacite: (a) BeO of chem compn 98.82% BeO , 0.66% MgO , 0.44% CaO , and 0.06% residue insol in HCl ; particle size was predominantly 6-10 μ , with max of 20 μ ; (b) pure quartz carefully cleaned by HCl after being crushed in steel grinder. Made up with stoichiometrically corr to phenacite from these two materials. Used as

USSR/Mineralogy - Phenacite 11 Oct 50
(Contd)

Mineralizers: $2\text{CaO} \cdot \text{SiO}_2$; $2\text{CaO} \cdot \text{SiO}_2$; and MnO_2 . Describes petrographic (E. I. Fried) and X-ray (A. I. Kitaygorodskiy) analyses. Submitted 7 Aug 50.

172T70

Melting diagram of mixtures in the system BeO-SiO_2 .
P. P. Iudinikov and A. M. Cherenanov. *Voprosy Petrograf.*
Mineral. Akad. Nauk SSSR 2, 241-246 (1953).—Mixts.
of BeO and SiO_2 compounded at intervals of 5 mole % and
near the eutd. eutectic at 1-2 mole % were shaped into cones
and fired at 1500° . The cones were then melted in an oxy-
hydrogen flame up to 2200° and an oxy-acetylene flame at
higher temps. The melting temp. was considered the
temp. at which the first drop appeared on the apex of the
cone. The temp. ran from $1713 \pm 20^\circ$, m.p. of 100%
 SiO_2 , to $2570 \pm 20^\circ$, m.p. of 100% BeO . The lowest temp.
 $1680 \pm 20^\circ$ was for the compn. BeO 17.5 and SiO_2 82.5
mole %. An optical analysis of the molten mass revealed
a mech. mixt. of glasses contg. crystals of various modi-
fications of SiO_2 and bromellite in various proportions.
Rapid heating and rapid cooling prevented diffusion and
homogenization. Phenacite, $2\text{BeO} \cdot \text{SiO}_2$, was not observed.
M. Hoesch

Uses/chemistry - Lithium Compds

Jul 53

"Lithium Compounds in Silicates," P.P. Budnikov and
A.M. Cherepanov (Moscow)

Usp Khim, Vol 22, No 7, pp 821-837

Summarizes in some detail information on the crystal chem, mineralogy, and phys properties on naturally occurring Li silicates. Discusses the properties of the lithium-bearing minerals amblygonite, lepidolite, petalite, and spodumene from the standpoint of their use in the production of fluxes, enamels, glasses, ceramics and other phases

273216

of the silicate industry. The bibliography, consisting of 50 references, is entirely from Western sources.

CHERECHANOV, A. M.

CHEREPAKOV, A.M.

137-1958-1-177

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 28 (USSR)

AUTHORS: Budnikov, P. P., Tresvyatskiy, S. G., Cherepanov, A. M.

TITLE: Highly Refractive Oxides and Their Products (Vysokoognepornyye okisly i izdeliya iz nikh)

PERIODICAL: V sbornik Fiziko-khimicheskiye osnovy keramiki, Moscow, Promstroyizdat, 1956, pp 301-324

ABSTRACT: Current views on the processing of raw materials, charges, molding, and sintering, and the properties and areas of application of products made of highly refractive oxides melting at over 2000°: Al_2O_3 , BeO , MgO , CaO , ZrO_2 , ThO_2 , and CeO_2 . In accordance with the data of Hume-Rothery (Hume-Rothery, W., Metallurgical Equilibrium Diagrams, London, 1952), practical recommendations are adduced on the choice of material for crucibles and the atmospheres and fluxes to be used in the fusion of 45 different pure metals (from light ones such as Li, Na, K and others to heavy ones like W, U, and others). Bibliography: 124 references.

Card 1/1

1. Refractory oxides--Applications

S. G.

CHERE PANOV, A. M.

PHASE I BOOK EXPLOITATION

83

AUTHORS: Tresvyatskiy, S. G., and Cherepanov, A. M.

TITLE: High-refractory Materials and Oxide Products
(Vysokoogneupornyye materialy i izdeliya iz okislov)

PUB. DATA: Gosudarstvennoye nauchno-tekhnicheskoye izdatel'stvo
literatury po chernoy i tsvetnoy metallurgii, Moscow,
1957, 246 pp., 3,000 copies

ORIG. AGENCY: None given

EDITORS: Matveyev, M. A.; Ed. in chief: Budnikov, P.P.,
Academician; Ed. of the Publ. House: Rozentsveyg, Ya.D.;
Tech. Ed.: Vaynshteyn, Ye. B.

PURPOSE: This book is for engineers and technicians working
with refractory materials in the fields of metallurgy
and industries using high temperatures.

COVERAGE: The book provides data on the manufacture and uses of
high-refractory materials made from pure oxides and
presents a method of classifying products made

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High-refractory Materials and Oxide Products (Cont.)

83

from alumina, zirconia, spinellides, oxides of bivalent metals, actinides, lanthanides, and mixed oxides. The principal stages of the manufacturing process are reviewed.

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There are 111 references of which 55 are Soviet, 50 English, 4 German, 2 Japanese.

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Ch. II. High-refractory Materials from Alumina

1. Manufacture and properties of alumina 70
2. Techniques of manufacturing products from alumina 86
3. Use of products from alumina 99

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There 64 references of which 47 are Soviet, 13 English,
4 German.

Ch. III. High-refractory Products from Oxides of Bivalent Metals

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There are 106 references, of which 42 are Soviet, 49 English,
13 German, 3 unidentified.

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Ch. IV. High-refractory Products from Zirconia

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There are 67 references of which 26 are Soviet, 33 English,
6 German, 2 French.

**Ch. V. High-refractory Products from Oxides of Actinides
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There are 45 references, of which 11 are Soviet, 30 English,
4 German.

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There are 27 references, of which 6 are Soviet, 20 English, 1 German

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AVAILABLE: Library of Congress (TN677.T67)

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AKAd. Nauk UKRAINSKOY SSR (for Budnikov)
(Refractory Materials)

Cherepanov, A.M.

57-10-12/33

AUTHOR: Cherepanov, A.M.
TITLE: On Growing BaTiO₃ Single Crystals (O vyrashchivaniⁱ monokristallov BaTiO₃)
PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 10, pp. 2280-2284, (USSR)
ABSTRACT: Single crystals on the basis of the composition 1 BaCl₂ . 0,53 BaCO₃ . 0,26 TiO₂ suggested by Mattias, B. (Phys. Rev., 73,808, 1948) were grown. The obtained triangular crystals with parallel surfaces and a hypotenuse of up to 5 mm showed in the measuring of the temperature distribution of the dielectric constant of the single crystals that their Curie temperature amounts to 127,5°; the volume exceded here at the Curie temperature by the sevenfold the volume at a room temperature. Furthermore single crystals of a composition 1 BaCl₂ . 1,4 BaCO₃ . 1 TiO₂ suggested by Puzayev, Yu. S., (report on the conference for Seignette electricity, 1956) were grown. After many experiments triangular single crystals of the Barium titanate with a hypotenuse length of up to 15 mm were obtained. The obtained curves of the temperature dependence of the dielectric constant ϵ show that the single crystals have at a room temperature an ϵ amounting from 800 to 1750, a Curie temperature of from 122 to 123° and a maximum of ϵ - from 10000 to 14500 at the Curie temperature. The great differences of of the single crystals at the room- as well as at the Curie temperature are effected by the different conditions in the growth of the crystals in the cru-

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On Growing BaTiO₃ Single Crystals

57-10-12/33

cible. There are 5 figures and 4 Slavic references.

ASSOCIATION: Institut for Physics imeni Lebedev, P. N., of the AN of the USSR
Moscow (Fizicheskly institut im. P. N. Lebedeva AN SSSR, Moskva)

SUBMITTED: March 21, 1957

AVAILABLE: Library of Congress

Card 2/2

24(3)

AUTHORS:

Cherepanov, A. M., Bogdanov, S. V.,
Razbash, R. Ya.

SOV/48-22-12-22/33

TITLE:

Piezoceramics With High Curie Temperature (Segnetokeramika
s vysokoy temperaturoy Kyuri)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958,
Vol 22, Nr 12, pp 1497-1499 (USSR)

ABSTRACT:

In the present paper a new method for the preparation of solid solutions with PbTiO_3 -content is described. Experimental results have shown that it is possible to obtain samples of solid solution with a PbTiO_3 -content not exceeding 15 mole %, by annealing in free atmosphere. In order to obtain samples having such a composition, no less than 20 mole % PbTiO_3 must be introduced into the initial composition. The method employed by the authors is to introduce the samples into casings of fireproof clay both in the temporary and in the final annealing process and to place these casings upon an alumina layer (Al_2O_3) which should be at least 5 mm thick. The samples are thereupon

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Piezoceramics With High Curie Temperature

SOV/48-22-12-22/33

buried in alumina. The layer thickness above the samples must be of about 8-10 mm, on a sample surface of up to 10 cm^2 . On a larger surface this layer must be correspondingly thicker. The annealing heat is experimentally determined for each composition. It depends on a number of factors: relations of initial components to one another, purity, fineness of grinding, etc. In the case of pure initial components a temperature of 1350° (PbTiO_3) up to 1450° (BaTiO_3) has been determined for the final annealing of the BaTiO_3 - PbTiO_3 -samples. A schematic illustration is given in figures 1a and b of the placing of the lead containing samples for the temporary and the final annealing process. The method described has already been successfully employed for the past 5 years for the preparation of the various lead containing compositions. The authors thank B. M. Vul for having given valuable advice. There are 5

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Piezoceramics With High Curie Temperature

SOV/48-22-12-22/33

figures, 1 table, and 8 references, 4 of which are Soviet.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva Akademii nauk
SSSR (Institute of Physics imeni P. N. Lebedev, Academy
of Sciences, USSR)

Card 3/3

24(3)

AUTHORS:

Kovalenko, G. M., Bogdanov, S. V.,
Cherepanov, A. M.

SOV/48-22-12-25/33

TITLE:

On the Effect of Admixtures of Fe_2O_3 , SrO , SnO_2 , ZrO_2 , and BaSnO_3 on the Characteristics of Dielectric Hysteresis Loops of Polycrystalline BaTiO_3 and of Solid Solutions BaTiO_3 - PbTiO_3 (Vliyaniye primesey Fe_2O_3 , SrO , SnO_2 , ZrO_2 i BaSnO_3 na kharakteristiki petli dielektricheskogo gisterezisa polikristallicheskogo BaTiO_3 i tverdykh rastvorov BaTiO_3 - PbTiO_3)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 12, pp 1508 - 1511 (USSR)

ABSTRACT:

The present paper tries to clarify the effect of some admixtures on the characteristics of dielectric hysteresis loops of pure polycrystalline BaTiO_3 as well as of some solid BaTiO_3 - PbTiO_3 -solutions. Barium titanate and six of its solid solutions with a lead content up to 30% mol were used as initial materials. Fe_2O_3 , SrO , SnO_2 and ZrO_2 up to 3% by

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On the Effect of Admixtures of Fe_2O_3 , SrO , SnO_2 , ZrO_2 , SOV/48-22-12-25/33
and BaSnO_3 on the Characteristics of Dielectric Hysteresis Loops of Poly-
crystalline BaTiO_3 and of Solid Solutions $\text{BaTiO}_3\text{-PbTiO}_3$

weight above the initial composition were added as admixtures. Data concerning investigated compositions are recorded in table 1. The method used for the production of samples was the same as that for the extraction of barium titanate. The annealing of lead-containing composition was carried out under conditions which prevented the volatilization of lead oxide. The sintering temperature reached 1550° with some compositions. It was shown that small quantities of Fe_2O_3 , SrO , SnO_2 , ZrO_2 and BaSnO_3 are already sufficient to exert an influence on the basic characteristics of dielectric hysteresis loops of BaTiO_3 as well as of solid $\text{BaTiO}_3\text{-PbTiO}_3$ solutions. The tension of the coercitive field and the tension of the electric field required for saturation are considerably reduced by admixtures in individual cases. The sufficiently high values of spontaneous and residual polarization as well as the rectangular loops of the initial material do not change. There are 3 tables and 7 references.

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On the Effect of Admixtures of Fe_2O_3 , SrO , SnO_2 , ZrO_2 , SOV/48-22-12-25/33
and BaSnO_3 on the Characteristics of Dielectric Hysteresis Loops of Poly-
crystalline BaTiO_3 and of Solid Solutions BaTiO_3 - PbTiO_3

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev, Academy of Sciences, USSR)

Card 3/3

BUDNIKOV, P.P., akademik, red.; CHEREPANOV, A.M., kand.tekhn.nauk, red.;
MANUYLOVA, G.M., red.; RYBKINA, V.P., tekhn.red.

[Ceramics and glass; translations] Keramika i steklo; sbornik
perevodov. Moskva, Izd-vo inostr.lit-ry, 1960. 310 p.

1. AN USSR (for Budnikov).
(Glass) (Ceramics)

(MIRA 13:12)

9.2180

85006

S/048/60/024/010/015/033
B013/B063

AUTHORS:

Bogdanov, S. V., Kovalenko, G. M., and Cherepanov, A. M.

TITLE:

Some Physical Properties of Piezoelectric Monocrystals of
Solid BaTiO_3 - PbTiO_3 , BaTiO_3 - BaSnO_3 , BaTiO_3 - PbTiO_3 - BaSnO_3
Solutions

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
Vol. 24, No. 10, pp. 1234-1237

TEXT: Monocrystals of the systems mentioned in the title were obtained with a PbTiO_3 content of up to 15% and a BaSnO_3 content of up to 10% from the solution in molten KF by way of slowly cooling the solution from $1000 \div 1200^\circ$ to $\sim 400^\circ\text{C}$. The same method was applied for obtaining monocrystals from the initial composition 85% BaTiO_3 -10% PbTiO_3 -5% BaSnO_3 . The crystals were bred from previously synthesized BaTiO_3 , PbTiO_3 , BaSnO_3 , and their individual components. Plane-parallel plates without cracks nor inclusions were employed in the process. Fig. 1 shows the dependence of

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Some Physical Properties of Piezoelectric
Monocrystals of Solid BaTiO_3 - PbTiO_3 ,
 BaTiO_3 - BaSnO_3 -, BaTiO_3 - PbTiO_3 - BaSnO_3
Solutions

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B013/B063

the dielectric constant ϵ of BaTiO_3 monocrystals on the field strength of an alternating field. Fig. 2 shows the dependences of ϵ on the field strength of the alternating field for single crystals of different compositions. As may be seen, the dielectric constant rises with an increase of the BaSnO_3 content, compared to the ϵ of the BaTiO_3 . The increase of the PbTiO_3 content, however, is followed by a drop of the dielectric constant. For all the crystals, the authors studied the temperature dependence of ϵ at different values of the alternating field. Since it was the same for all of the monocrystals investigated, it is shown in Fig. 3, restrictedly to the composition (95% BaTiO_3 -5% PbTiO_3) only. This shows a strong differentiation of the dependence of ϵ for large fields and of $\epsilon = f(T)$ for small fields. Dielectric hysteresis loops were taken for all specimens. The measurement results are tabulated. The characteristics of the single crystals were improved in all cases by introducing Fe_2O_3 into the mixture serving for the crystal breeding. The dependences of the quantities examined on the composition of the

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Some Physical Properties of Piezoelectric
Monocrystals of Solid BaTiO_3 - PbTiO_3 ,
 BaTiO_3 - BaSnO_3 -, BaTiO_3 - PbTiO_3 - BaSnO_3
Solutions

S/048/60/024/010/015/033
B013/B063

monocrystals were found to be the same as in polycrystalline specimens of a similar composition. However, the dielectric constant, the spontaneous and the residual polarization are higher in monocrystals whereas the coercive force is smaller than in polycrystalline specimens. The present paper was read at the Third Conference on Piezoelectricity, which took place in Moscow from January 25 to 30, 1960. There are 3 figures, 1 table, and 13 references: 9 Soviet.

✓

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S/584/61/003/000/025/029
D207/D304

152440

AUTHOR: Cherepanov, A. M.

TITLE: On growing monocrystals of BaTiO_3 - PbTiO_3 and BaTiO_3 - BaSnO_3 solid solutions

SOURCE: Akademiya nauk SSSR. Institut kristallografii. Roost kristallov, v. 3, 1961, 457-459

TEXT: The author describes preparation of BaTiO_3 - PbTiO_3 monocrystals, containing 5, 10, or 15 mol.% of PbTiO_3 , by growing them from molten K_2F_2 . Brief mention is made of attempts to grow BaTiO_3 - BaSnO_3 monocrystals. Permittivity at the Curie point in as-grown monocrystals was only 2 - 4 times greater than the permittivity at room temperature. Subsequent annealing in an atmosphere of oxygen at 900 - 1000°C increased the Curie-point permittivity to a value which was 10 - 15 times the permittivity at room temperature. Hysteresis loops obtained by Kovalenko

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30519
S/584/61/003/000/025/029
D207/D304

On growing monocrystals...

were more sharply rectangular than those of ceramic samples of the same composition. If initial charge contained about 25 mol.% PbTiO_3 , monocrystals could be produced with 20 - 40 mol.% PbTiO_3 . The Curie temperature of such monocrystals was 280°C . Using the same thermal cycle as for $\text{BaTiO}_3 - \text{PbTiO}_3$, the author succeeded in preparing $\text{BaTiO}_3 - \text{BaSnO}_3$ monocrystals containing not more than 3 mol.% BaSnO_3 . This was because of the poor solubility of BaSnO_3 under the experimental conditions used

by the author. Acknowledgments are made to B. M. Vul and S. V. Bogdanov for their advice. There are 1 figure and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: G. Shirane and K. Suruki, J. Phys. Soc. Japan, 6, 274, 1951; B. Mattias, Phys. Rev., 73, 808, 1948; J. P. Remeika, J. Am. Chem. Soc., 76, no. 3, 940-941, 1954.

Card 2/2

S/058/62/000/006/062/136
A061/A101

AUTHOR: Cherepanov, A. M.

TITLE: On the growth of single crystals of solid solutions of the BaTiO_3 - PbTiO_3 and BaTiO_3 - BaSnO_3 systems

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 10, abstract 6E86
(In collection: "Rost kristallov. T. 3". Moscow, AN SSSR, 1961, 457 - 459. Discuss., 501 - 502)

TEXT: Single crystals were grown from batches of the following initial compositions (mole per cent): 25 (0.95 BaTiO_3 + 0.05 PbTiO_3) + 75 K_2F_2 ; 22 (0.90 BaTiO_3 + 0.10 PbTiO_3) + 78 K_2F_2 ; 19 (0.85 BaTiO_3 + 0.15 PbTiO_3) + 81 K_2F_2 . The specimens were heated to 1,000 - 1,100°C, aged for 8 - 24 hours, then cooled off at a rate of 20 - 50 deg/hr. The single crystals had the shape of triangular plates up to 0.5 mm thick with a hypotenuse of up to 5 mm and possessed a tetragonal structure, $c/a = 1.014$ (Curie point 187°C) and $c/a = 1.0160$ (Curie point 217°C). The composition of grown single crystals greatly differed from that of the mixture charged for crystallization. The individual single crystals con-

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On the growth of...

S/058/62/000/006/062/136
A061/A101

tained 20 - 40 moles per cent of PbTiO_3 . The single crystals produced in the BaTiO_3 - BaSnO_3 system contained up to 3% BaSnO_3 .

I. Kamentsev

[Abstracter's note: Complete translation]

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15-2230

31610
S/063/61/006/006/002/006
A057/A126

AUTHORS: Tresvyatskiy, S. G., Doctor of Technical Sciences, Cherepanov, A. M.,
Candidate of Technical Sciences.

TITLE: Highly refractory systems with oxides of lanthanides and actinides

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D. I. Mendele-
yeva, v. 6, no. 6, 1961, 612 - 618

TEXT: A review of literature on oxides of lanthanides and actinides with other highly refractory oxides is presented and discussed. This discussion of phase diagrams is of practical and theoretical importance, since oxides of rare earth elements became valuable not only in atomic industry, but also in the manufacture of various highly refractory materials with special properties. Since the phase diagrams are still insufficiently developed, some of them are only tentative. International papers containing phase equilibrium diagrams of systems with UO_2 , ThO_2 , Sm_2O_3 , Gd_2O_3 , CeO_2-ZrO_2 , $ZrO_2-La_2O_3$ and $ZrO_2-Nd_2O_3$ are mentioned. Based on the presented review and discussions the following tentative general conclusions were drawn by the authors: Apparently all systems of four-valent actinide oxides with beryllium oxide are simple eutectic systems in the temperature range

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S/063/61/006/006/002/006

A057/A126

Highly refractory systems with...

of the solidus and liquidus. Formation of solid solutions, or at high temperature stable compounds could not be observed. Systems with magnesium oxide are probably also simple eutectic systems, but here the formation of solid solutions with a limited solubility at the side of the actinide oxide is possible. Systems with calcium oxide contain a liquidus of an eutectic type and a region of solid solutions at the side of actinide oxide. In these systems formation of melting (with decomposition) compounds is possible, but this question needs some further investigations. Systems with aluminum oxide are analogous to systems with beryllium oxide. Systems with zirconium dioxide are characterized by wide regions of solid solutions of two types, $1a_2$, based on actinide oxide and on zirconium oxide, with a two-phase region of these two solid solutions at intermediate concentrations. Characteristic for actinide oxide systems is the formation of solid solutions with an almost infinite solubility in the solid state. Systems with actinide oxides and SiO_2 are characterized by an eutecticum close to SiO_2 and by the formation of orthosilicates of the type $AcSiO_4$, melting with decomposition below the temperature of the liquidus. In systems of actinide oxides with oxides of trivalent rare earths a region of solid solutions is formed on the side of actinide oxide having a two-phase region of the solid solution and Re_2O_3 (Re = rare earth) at the side of the rare earth oxide. In relation to systems with oxides of trivalent rare

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A057/A126

Highly refractory systems with...

earths the following conclusions were presented: Systems with beryllium oxide are eutectic and analogous to systems with actinide oxides but they have a very low melting temperature of the liquidus (about 1,450 - 1,500°C). No investigations were made yet on systems with oxides of magnesium, calcium, and strontium. Characteristic for systems with aluminum oxide is the formation of compounds of the type ReAlO_3 , melting without decomposition above 2,000°C, and the presence of two eutectics, one between Re_2O_3 - ReAlO_3 and the other between ReAlO_3 - Al_2O_3 . Apparently no solid solutions were formed between the components in these systems. Systems with zirconium dioxide are characterized by wide regions of solid solutions, and differ from other systems by complexity. They are not yet sufficiently investigated. Systems of rare earth oxides between themselves are not investigated, but the authors assume the possibility of the formation of regions of solid solutions, soluble in the solid state almost to infinity in these systems. Systems with SiO_2 are characterized by the formation of three silicates, and the presence of a wide region of immiscibility in the liquid state at the side of SiO_2 . The authors point out that the conclusions presented are only tentative because of the insufficiency in investigating the whole discussed matter. There are 17 figures, and 30 references: 11 Soviet-bloc and 19 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: P. E. Evans, J. Am.

Card 3/4

Highly refractory systems with...

31610

S/063/61/006/006/002/005
A057/A126

Ceram. Soc., 43, no. 9, 443 (1960); E. M. Levin, H. F. McMurdie, Phase Diagrams
for Ceramists. Part. 2, USA, Ohio, 1959; C. Curtis, J. Johnson, J. Am. Ceram.
Soc., 40, no. 1, 15 (1957); F. Alfred, A. White, Trans. Brit. Ceram. Soc., 58,
no. 4, 199 (1959).

Card 4/4

S/063/63/008/002/004/015
A057/A126

AUTHORS: Budnikov, P.P., Academician of the Academy of Sciences, UkrSSR,
Cherepanov, A.M., Candidate of Technical Sciences

TITLE: Some compounds of zirconium and fields of their application

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D.I. Mendele-
yeva, v. 8, no. 2, 1963, 141 - 148

TEXT: The production, properties, and possibilities for application of
zirconium compounds are discussed based on appropriate international literature.
There are 2 figures and 2 tables.

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L 31805-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EPR/EPA(w)-2/EWP(t)/EWP(b)/EWA(h) Feb/
 Pab-10/Ps-4/Pt-10/Pu-4 IJP(o) JD/JG/AT/WH
 ACCESSION NR AM/04/292 BOOK EXPLOITATION S/ 71
 841

Cherepanov, Aleksandr Mikhaylovich; Tresvyskiy, Sergey Glebovich

Highly refractory materials and products made from oxides (Vysokoogneupornyye materialy i izdeliya iz okislov), 2d ed., rev. and enl., Moscow, Izd-vo Metallurgiya, 1964, 400 p. illus., biblio., tables. Errata slip inserted. 1,940 copies printed. 27

TOPIC TAGS: refractory material, aluminum oxide, zirconium dioxide, actinide oxide, lantanide oxide, spinellide, beryllium oxide, magnesium oxide, calcium oxide, thorium dioxide, uranium dioxide, high temperature 18

PURPOSE AND COVERAGE: This book presents the available information in the field of the preparation and use of highly refractory materials from pure oxides. The book includes a classification of articles made from aluminum oxide, beryllium oxide, magnesium oxide, calcium oxide, zirconium dioxide, and actinide and lantanide oxides. The basic stages in the process of making these articles are described. The book also includes the properties of articles made from the enumerated oxides and their areas of application are indicated. The book is intended for engineers and technicians working in the fields of refractory materials, metallurgy, and industries using high temperatures.

Card 1/2^b

I. 31805-65

ACCESSION NR AM4047292

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Ch. V. Highly refractory articles from actinide and lanthanide oxides -- 313

Ch. VI. Highly refractory articles from spinellides and oxide mixtures -- 374

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SUBMITTED: 12Mar64

SUB CODE: MM, MT

NO REF SOV: 374

OTHER: 481

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L 23519-65 BPF(n)-2/EPA(s)-2/EPA(w)-2/EWT(m)/EPA(bb)-2/EWP(b)/EWP(e) Pg-4/
Pt-1G/Pu-4/Pat-10 WH/WH

ACCESSION NR: AP4047116

S/0080/64/037/010/2093/2107

AUTHOR: Budnikov, P. P.; Cherepanov, A. M.

TITLE: The crystallization of glasses and melts

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 10, 1984, 2093-2107

TOPIC TAGS: glass, crystallization, nucleation, kinetics, mechanism, literature review, pyroceram, light sensitive glass, heat treatment, glass microstructure

ABSTRACT: This review of the domestic and foreign literature relates to the nucleation and crystallization of glasses and melts. Topics covered include descriptions of the crystallization phenomenon, its effect on the mechanical strength and thermal stability of glass, and the improvement in mechanical strength by chemical and heat treatments; pyrocerams, light-sensitive glasses, crystalline glass materials based thereon, and their classification according to the type of catalyst with which the nucleation centers are formed; effect of heat treatment conditions on electrical properties; the microstructure of glass and

Card 1/2

L 23519-65

ACCESSION NR: AF4047116

the dependence of mechanical strength on the crystal dimensions; methods for obtaining crystalline vitreous materials; and the mechanism and kinetics of nucleation and crystal growth. Orig. art. has: 2 tables and 3 figures

ASSOCIATION: None

SUBMITTED: 25Jan64

ENCL: 00

SUB CODE: MT

NO REF SOV: 016

OTHER: 027

Cord2/2

CHEREpanov, A.M., kand. tekhn. nauk

High-temperature inorganic coatings for use in the modern
technology. Zhur.VKHO 10 no.5:532-539 '65.

(MIRA 18:11)

L 27396-66, EWP(e)/EWI(m)/ETC(f)/EWG(m)/EWP(t) IJP(c) JD/JG/AT/WH
 ACC NR: AP6017668 SOURCE CODE: 1/R/0063/65/010/005/0532/0539
 AUTHOR: "Cherepanov, A. M. (Candidate of technical sciences)
 ORG: none
 TITLE: High-temperature inorganic coatings for modern technology
 SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 10, no. 5, 1965, 532-539
 TOPIC TAGS: metal oxidation, metal melting, protective coating, thermal stress, refractory oxide, intermetallic compound
 ABSTRACT: In most cases, the operating temperature of existing construction materials is limited by their oxidation and other chemical processes, by erosion, diffusion, etc. For example, such high-temperature metals as Mo, Ta, W, Nb, V, and certain others, although their melting points are above 2000°C, at temperatures higher than 800°C they are rapidly oxidized. The oxides formed are usually vaporized, causing "smoking" of the metal. In practice, there are two approaches in investigating and solving the problem of increasing the strength characteristics of high-temperature construction materials: 1) developing formulations of alloys with high resistance to oxidation at high temperature; 2) developing formulations and methods of applying high-temperature coatings, affording increased reliability of materials and their
 Card 1/2 UDC: 536.45+667.66

L 27396-66

ACC NR: AP6017668

capacity to function at higher temperatures. The most important condition in the technology of high-quality applications of coatings is assurance of their firm bonding with the article coated. Without such bonding, the coating undergoes breakdown practically speaking from each stress source, for example, mechanical load, thermal stresses due to differences in coefficients of expansion, etc. Most coatings fulfill more than one function. Coating against, for example, oxidation at high temperatures must: a) prevent diffusion of ions of oxygen and metal; b) have low vapor pressures at high temperatures; c) have a melting point above the working ambient temperature; d) have low reactivity with the object coated and with the high-temperature medium in which the coating is used. The following groups of metals are used as components of high-temperature coatings: 1) high-refractory oxides; 2) "hard metals" (carbides, borides, nitrides, silicides); 3) intermetallic compounds; 4) metals; 5) pyrolytic precipitates. Orig. art. has: 3 figures, 3 tables and 1 formula. [JPRS]

SUB CODE: 11, 29 / SUBM DATE: none / ORIG REF: 016 / OTH REF: 023

Card 2/2

BUDNIKOV, P.P., akademik, red.; CHEREPANOV, A.M., kand. tekhn. nauk,
red.; MANUYLOVA, G.M., red.; PUTAPENKOVA, Ye.S., tekhn.red.

[Cement; collection of translations from foreign periodicals]
TSement; sbornik perevodov iz inostrannoi periodicheskoi li-
teratury. Moskva, Izd-vo inostr. lit-ry, 1962. 217 p.
(MIRA 16:4)

1. Akademiya nauk Ukr. SSR (for Budnikov).
(Cement)

CHEREPANOV, A. N. (Moskva)

Multiple arachnoid endotheliomatosis in combination with carcinomatosis. Vop. neirokhir. no.6:62-64 '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni institut neyrokhirurgii imeni akad. N. N. Burdenko AMN SSSR.

(CANCER) (MENINGIOMA)

CHEREPANOV, A.N.

Association of Recklinghausen's central neurofibromatosis with multiple arachnoendotheliomas of the brain and spinal cord. Vop. neirokhir. 28 no.4:55-57 J1-Ag '64.

(MIRA 18:3)
1. Kafedra neyrokhirurgii (zav. - prof. A.A.Arendt) Tsentral'nogo instituta usovershenstvovaniya vrachey i Institut neyrokhirurgii imeni Burdenko (dir. - prof. A.I.Arutyunov) AMN SSSR, Moskva.

CHEREPA NOV, A. N.

Lesions of the central nervous system in Recklinghausen's disease.
Zhur. nevr. i psikh. 65 no.6:825-827 '65.

(MIRA 18:6)

1. Kafedra neyrokhirurgii (zaveduyushchiy - prof. A.A. Arendt
[deceased]) Tsentral'nogo instituta usovershenstvovaniya vrachey
i Institut neyrokhirurgii im. Burdenko (direktor -- prof. A.I.
Arutynov) AMN SSSR, Moskva.

L 32181-66 EWT(1)/EWP(m)/T-2 IJP(c)

ACC NR: AP6013917

SOURCE CODE: UR/0207/66/000/002/0014/0020

AUTHOR: Cherepanov, A. N. (Novosibirsk); Yakovlev, V. I. (Novosibirsk)

70
B

ORG: none

TITLE: A self-similar solution to the problem of expansion of a cylindrical column of conducting gas in a longitudinal magnetic field

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1966, 14-20

TOPIC TAGS: conducting gas, longitudinal magnetic field, magnetohydrodynamics

ABSTRACT: The authors study the unsteady radial motion of an infinite cylindrical column of conducting gas along a time-variable longitudinal magnetic field. The method of separating the variables was used for calculating the exact solution for a system of magnetohydrodynamic equations, assuming proportionality between the static pressure of the plasma on the boundary of the column and the external magnetic pressure. The energy characteristics of the interaction were calculated. Expressions are given for the effect of the magnetic Reynolds number on the ratio of the work done by the gas in an infinite time interval to the initial energy of the column. A physical model of this type may be interpreted as the expansion of a compressible conducting gas column in a nonconducting incompressible fluid located in a permeable infinite cylinder. In this case the requirement of proportionality between the static and magnetic pressures

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reduces to the condition of a change in the external pressure at the boundary of the permeable cylinder according to a law which may be easily determined. Orig. art. has: 1 figure, 43 formulas.

SUB CODE: 20/ SUBM DATE: 27Oct65/ ORIG REF: 002

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